

# WASHINGTON AGRICULTURAL CHEMICAL USAGE BULB ONIONS August 2005



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## BULB ONIONS

Results of the 2004 Vegetable Chemical Use Survey are presented in the following tables. The survey was designed to collect data on chemical applications made from the end of the 2003 harvest through completion of the 2004 harvest from a sampling of vegetable growers in Washington. Targeted crops in Washington included asparagus, processing carrots, processing sweet corn, dry onions, and processing green peas. The probability nature of the survey allowed for estimates that are representative of chemical use on all targeted vegetables in the state.

Survey results include estimates of total area treated, number of applications, rates per application and per crop year, and total pounds of chemicals applied. Data are summarized for the primary nutrients and for the active ingredients of pesticides and other chemicals applied. Pesticide data were collected for specific formulations of active ingredients (trade name products) and then converted to active ingredient. Therefore, the estimates associated with a particular active ingredient may represent applications of several trade name products. Pesticide application rates also reflect partial coverage applications as a result of band, spot, and alternate

row spraying techniques.

Six states were surveyed for dry onions in 2004: California, Georgia, New York, Oregon, Texas, and Washington. Surveyed acreage totaled 133,900 acres and Washington accounted for 15 percent of total surveyed acreage.

Within the surveyed states, seventy-eight percent of the dry onion acreage received at least some herbicide application. Oxyfluorfen was used the most, being applied to 54 percent of the dry onion acreage. Insecticides were applied to 77 percent of the dry onion acreage. The range of insecticide treatments was from 49 percent of the California onion acres to 98 percent in Oregon. Lambda-cyhalothrin and Methomyl were the predominant insecticides used, at 46 and 33 percent, respectively. Fungicides were applied to 76 percent of the acres planted. Chlorothalonil was used on 45 percent of the acreage planted, and Mancozeb was used on 43 percent.

Fertilizer information was not collected on the 2004 Vegetable Chemical Use Survey.



**Bulb Onions: Fertilizer Applications, Planted Acreage & Percentage Receiving Applications,  
Program States & Total, 2002 & 2004**

State	Planted Acreage		Area Receiving 1/					
			Nitrogen		Phosphate		Potash	
	2002	2004	2002	2004	2002	2004	2002	2004
	1,000 Acres		Percent					
California	45,400	45,300	97	-	80	-	57	-
Georgia	14,700	16,500	100	-	100	-	100	-
New York	12,700	13,500	100	-	100	-	100	-
Oregon	17,400	20,500	100	-	99	-	83	-
Texas	19,200	17,400	100	-	100	-	64	-
Washington	17,100	20,500	80	-	75	-	71	-
<b>TOTAL</b>	<b>126,500</b>	<b>133,900</b>	<b>96</b>	<b>-</b>	<b>89</b>	<b>-</b>	<b>73</b>	<b>-</b>

1/ Refers to acres receiving one or more applications of a specific fertilizer ingredient.

- Fertilizer applications were not collected during the 2004 Vegetable Chemical Use Survey.

**Bulb Onions: Pesticide Applications, Planted Acreage & Percentage Receiving Applications,  
Program States & Total, 2002 & 2004**

State	Planted Acreage		Area Receiving 1/							
			Herbicides		Insecticides 2/		Fungicides		Other Chemicals	
	2002	2004	2002	2004	2002	2004	2002	2004	2002	2004
	1,000 Acres		Percent							
California	45,400	45,500	83	59	74	49	80	49	17	5
Georgia	14,700	16,500	92	52	47	77	100	100	**	**
New York	12,700	13,500	90	97	92	96	99	97	45	54
Oregon	17,400	20,500	99	96	99	98	90	82	76	48
Texas	19,200	17,400	94	90	71	90	78	91	**	4
Washington	17,100	20,500	93	98	92	92	94	85	72	19
<b>TOTAL</b>	<b>126,500</b>	<b>133,900</b>	<b>90</b>	<b>78</b>	<b>78</b>	<b>77</b>	<b>87</b>	<b>76</b>	<b>31</b>	<b>18</b>

\*\* Insufficient reports to publish data for one or more of the pesticide classes.

1/ Refers to acres receiving one or more application of a specific pesticide class.

2/ Total applied excludes Bt's (*Bacillus thuringiensis*) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

## Bulb Onions: Agricultural Chemical Applications, Washington, 2002 & 2004 1/

Active Ingredient 2/	Area Applied 3/		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	2002	2004	2002	2004	2002	2004	2002	2004	2002	2004
<b>Herbicides</b>	<b>Percent</b>		<b>Number</b>		<b>Pounds Per Acre</b>				<b>1,000 Pounds</b>	
Bromoxynil	50	89	1.6	1.2	0.30	0.35	0.50	0.42	4.3	7.7
Clethodim	77	20	1.1	1.2	0.13	0.16	0.14	0.19	1.9	0.8
DCPA	66	-	1.0	-	5.23	-	5.23	-	59.1	-
Fluazifop-p-butyl	-	32	-	1.0	-	0.10	-	0.11	-	0.7
Glyphosate	50	43	1.0	1.1	0.38	0.46	0.38	0.52	3.2	4.6
Oxyfluorfen	91	91	1.4	1.2	0.20	0.16	0.29	0.19	4.5	3.5
Pendimethalin	85	61	1.0	1.5	0.67	0.74	0.73	1.12	10.6	13.9
Sethoxydim	4	-	1.0	-	0.25	-	0.27	-	0.2	-
<b>Insecticides</b>										
Chlorpyrifos	69	15	1.0	1.1	0.93	0.85	0.93	0.97	11.0	2.9
Diazinon	-	41	-	1.8	-	1.01	-	1.77	-	14.9
Lambda-cyhalothrin	57	52	2.0	1.9	0.03	0.03	0.06	0.06	0.6	0.6
Methomyl	-	18	-	2.4	-	0.86	-	2.06	-	7.5
Oxamyl	34	63	2.1	2.8	0.92	0.45	1.96	1.27	11.3	16.4
Zeta-cypermethrin	-	37	-	2.4	-	0.05	-	0.11	-	0.8
<b>Fungicides</b>										
Chlorothalonil	61	38	2.4	2.4	1.12	0.88	2.72	2.13	28.1	16.4
Copper hydroxide	29	31	2.9	3.3	0.73	0.84	2.17	2.80	10.8	17.8
Mancozeb	38	42	2.6	1.2	0.66	0.81	1.73	0.94	11.2	8.1
<b>Other Chemicals</b>										
Maleic hydrazide	51	-	1.0	-	1.93	-	1.97	-	17.2	-
Metan-sodium	64	-	1.0	-	126.40	-	126.56	-	1,393.4	-

1/ Planted acres in 2002 and 2004 for Washington were 17,100 acres and 20,500 acres, respectively.

2/ Insufficient data to publish data for the following agricultural chemicals: 2002: Herbicides: Fluazifop-P-butyl, Paraquat, S-Metolachlor, Trifluralin. Insecticides: Azadirachtin, Azinphos-methyl, Diazinon, Kaolin, Malathion, Methomyl, Methyl parathion, Permethrin, Petroleum distillate, Zeta-cypermethrin. Fungicides: Copper amm. complex, Copper resinate, Cyprodinil, Dicloran, Fludioxonil, Iprodione, Maneb, Mefenoxam, Metalaxyl, Sulfur. Other Chemicals: Cytokinins. 2004: Herbicides: 2,4-D, Alachlor, Atrazine, Bentazon, DCPA, Glyphosate diam salt, Napropamide, Paraquat, Trifluralin. Insecticides: Azadirachtin, Azinphos-methyl, Clove oil, Cottonseed oil, Dimethoate, Kaolin, Malathion, Methyl parathion, Oxydemeton-methyl, Permethrin, Petroleum distillate, Pyrethrins. Fungicides: Azoxystrobin, Boscalid, Copper amm. complex, Copper oxide, Copper resinate, Copper sulfate, Cyprodinil, Dicloran, Fludioxonil, Iprodione, Mefenoxam, Metalaxyl, Pyraclostrobin, Sulfur. Other Chemicals: Cytokinins, Dichloropropene, Garlic oil, Maleic hydrazide, Metan-sodium.

3/ Refers to acres receiving one or more applications of a specific agricultural chemical.

Note: Data may not multiply across due to rounding.

## Bulb Onions: Agricultural Chemical Applications, Program States, 2002 & 2004 1/

Active Ingredient 2/		Area Applied 3/		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
		2002	2004	2002	2004	2002	2004	2002	2004	2002	2004
		<b>Percent</b>		<b>Number</b>		<b>Pounds Per Acre</b>				<b>1,000 Pounds</b>	
<b>Herbicides</b>	Acifluorfen	-	3	-	1.0	-	0.17	-	0.18	-	0.8
	Bensulide	6	6	1.1	1.3	2.58	2.69	3.03	3.61	24.1	30.9
	Bentazon	-	5	-	1.1	-	0.42	-	0.46	-	2.8
	Bromoxynil	49	48	1.9	1.6	0.14	0.22	0.27	0.35	16.9	22.4
	Clethodim	13	8	1.2	1.1	0.13	0.14	0.15	0.16	2.5	1.7
	DCPA	18	6	1.0	1.0	4.86	3.98	5.14	4.17	119.4	32.3
	Dimethenamid	6	5	2.4	2.2	1.02	0.72	2.48	1.58	17.9	11.1
	Dimethenamid-P	-	4	-	2.0	-	0.46	-	0.94	-	4.6
	Fluazifop-p-butyl	12	22	1.2	1.2	0.22	0.17	0.28	0.21	4.3	6.2
	Glyphosate	19	21	1.0	1.1	0.56	0.69	0.59	0.79	13.9	21.9
	Oxyfluorfen	76	54	2.4	2.1	0.09	0.09	0.24	0.18	22.6	13.2
	Paraquat	4	-	1.1	-	0.54	-	0.61	-	3.4	-
	Pendimethalin	52	45	1.4	1.6	0.80	0.85	1.20	1.36	78.1	81.4
	S-Metolachlor	5	3	1.0	1.3	1.39	1.34	1.46	1.71	8.7	7.7
Sethoxydim	6	5	1.3	1.3	0.21	0.25	0.29	0.33	2.3	2.2	
Trifluralin	4	3	1.2	1.0	0.75	0.93	0.95	0.93	5.3	4.3	
<b>Insecticides</b>	Azadirachtin	4	2	1.5	1.9	0.04	0.008	0.07	0.01	0.4	**
	Azinphos-methyl	8	-	1.5	-	0.68	-	1.02	-	10.3	-
	Bt (Bacillus thur.) 4/	1	-	1.7	-	-	-	-	-	-	-
	Chlorpyrifos	31	26	1.0	1.1	1.13	1.34	1.17	1.46	46.5	51.5
	Cypermethrin	5	7	1.9	1.6	0.09	0.09	0.17	0.14	1.0	1.3
	Diazinon	20	23	1.5	1.9	1.13	0.86	1.79	1.62	44.3	49.2
	Lambda-cyhalothrin	49	46	2.8	2.3	0.03	0.03	0.07	0.06	4.7	3.9
	Malathion	2	4	1.4	1.9	1.20	0.56	1.76	1.10	4.6	5.8
	Methomyl	25	33	2.1	1.8	0.52	0.58	1.14	1.07	35.7	47.9
	Methyl parathion	12	7	2.2	1.9	0.45	0.45	0.98	0.88	15.2	8.6
	Oxamyl	9	19	1.8	2.6	0.88	0.52	1.60	1.36	17.5	33.6
	Oxydemeton-methyl	-	6	-	1.6	-	0.46	-	0.72	-	5.5
Permethrin	8	8	1.8	1.7	0.16	0.14	0.29	0.24	2.8	2.6	
Zeta-cypermethrin	17	26	2.5	2.3	0.04	0.05	0.11	0.11	2.4	3.8	
<b>Fungicides</b>	Azoxystrobin	13	11	1.5	1.9	0.16	0.15	0.24	0.28	3.9	4.2
	Boscalid	-	6	-	1.4	-	0.18	-	0.25	-	2.1
	Chlorothalonil	40	45	3.4	3.8	1.07	1.09	3.67	4.13	185.1	246.5
	Copper amm. complex	2	-	2.0	-	0.21	-	0.41	-	1.0	-
	Copper hydroxide	25	28	2.5	3.1	0.66	0.76	1.68	2.33	52.8	86.7
	Copper resinate	5	-	3.9	-	0.19	-	0.74	-	4.3	-
	Dicloran	1	1	1.5	1.1	1.74	1.47	2.73	1.59	4.5	2.0
	Iprodione	18	20	1.8	2.3	0.54	0.57	1.02	1.33	22.9	36.1
	Mancozeb	49	43	3.7	4.0	1.35	1.45	5.03	5.76	310.6	333.4
	Maneb	6	10	1.7	2.2	1.61	1.69	2.77	3.78	21.1	51.8
	Mefenoxam	20	18	1.4	1.2	0.21	0.11	0.32	0.14	8.2	3.4
	Metalaxyl	17	5	1.2	1.2	0.10	0.12	0.12	0.15	2.6	1.0
	Pyraclostrobin	-	6	-	1.5	-	0.14	-	0.21	-	1.8
	Sulfur	2	3	1.8	1.9	0.91	1.87	1.72	3.59	5.0	12.9
<b>Other Chemicals</b>	Busan 881	*	-	1.1	-	194.84	-	222.21	-	226.5	-
	Chloropicrin	3	3	1.0	1.0	36.74	41.58	36.87	41.74	162.9	192.2
	Dichloropropene	6	4	1.0	1.0	174.47	175.10	174.83	175.67	1,239.9	955.7
	GABA	1	2	1.8	1.1	0.09	0.09	0.16	0.10	0.3	0.2
	L-Glutamic acid	1	2	1.8	1.1	0.09	0.09	0.16	0.10	0.3	0.2
	Maleic hydrazide	19	11	1.0	1.1	1.48	2.02	1.50	2.22	36.7	32.0
	Metam-sodium	14	4	1.0	1.0	148.47	134.85	157.42	139.32	2,757.4	819.4

\* Applied on less than one percent of acres. \*\* Total applied is less than 50 lbs.

1/ Planted acres in 2002 and 2004 for the 6 major states were 126,500 acres and 133,900 acres respectively. States in 2002 and 2004 were CA, GA, NY, OR, TX, & WA.

2/ Insufficient reports to publish data for the following agricultural chemicals: 2002: Herbicides: Alachlor, Atrazine, Bentazon, Dimethenamid-P, Linuron, MCPB. Insecticides: Carbaryl, Dimethoate, Endosulfan, Esfenvalerate, Ethyl parathion, Imidacloprid, Indoxacarb, Kaolin, Methamidophos, Petroleum distillate, Potassium salts. Fungicides: Basic copper sulfate, Copper oxychloride, Cyprodinil, Fludioxonil, Fosetyl-al, Trichoderma harz. Other Chemicals: Cytokinins, Methyl bromide, Monocarbamide dihyd. 2004: Herbicides: 2,4-D, Alachlor, Atrazine, Diuron, Ethalfluralin, Glyphosate diam. salt, Napropamide, Paraquat, Simazine. Insecticides: Acephate, Azinphos-methyl, Bifenthrin, Bt (Bacillus thur), Carbaryl, Clove oil, Cottonseed oil, Cyromazine, Dimethoate, Endosulfan, Esfenvalerate, Imidacloprid, Kaolin, Methoxychlor, Neem oil, Petroleum distillate, Piperonyl butoxide, Potassium salts, Pyrethrins, Spinosad. Fungicides: Bacillus subtilis, Basic copper sulfate, Captan, Copper amm. complex, Copper oxide, Copper resinate, Copper sulfate, Cyprodinil, Dimethomorph, Fludioxonil, Fosetyl-al, Phosphorous acid, Triadimefon. Other Chemicals: Busan 881, Cytokinins, Garlic oil, Gibberellic acid, Hydrogen peroxide, Indolebutyric acid, Metaldehyde, Methyl bromide, Monocarbamide dihyd.

3/ Refers to acres receiving one or more applications of a specific agricultural chemical.

4/ Rates and total applied are not available because amounts of active ingredient between products are not comparable.

Note: Data may not multiply across due to rounding.